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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,948	07/28/2003	Toru Yoshie	OKI.555	2267

7590 08/06/2004

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EXAMINER

LAM, CATHY FONG FONG

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 08/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/627,948	Applicant(s) YOSHIE, TORU	
	Examiner Cathy Lam	Art Unit 1775	

mw
SC

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 June 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>06-10-2004</u> . | 6) <input type="checkbox"/> Other: ____. |

Drawings

1. Figures 10 & 11 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 1 objected to because of the following informalities: the term "grove" is believed to be an error, applicant needs to check for correct spelling. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Claims 1, 2, 8 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1 & 2, it is vague and indefinite as to the relationship between the first portion, the second portion and the reference width? It is indefinite as to what is "the reference width" since the reference width is a variable depends on the thickness of the wiring, and that the wiring thickness is also a variable.

In claim 8, it is indefinite as to what “ $\sqrt{3}$ half” means? Does it mean $\sqrt{3\frac{1}{2}}$ or

$\frac{\sqrt{3}}{2}$? Clarification is required.

In claim 9, it is unclear as to how “approximately 85% of the width of the reference width” is referring to? Clarification is required.

Claim Rejections - 35 USC § 102/103

4. Claims 1-10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Jain (US 5602423).

Due to the invention is unclear, with respect to the prior art rejections below, the claims will be given the broadest possible interpretation in view of the specification.

Jain discloses a damascene structure comprised of a substrate (20), an insulating layer (22), grooves (24,26), a pattern of insulating pillar (50) and conductive lines (30,32) (Fig. 2B).

Grooves (24&26) are formed into the insulating layer (22), with one channel (24) is wider than the other channel (26) (Fig. 1B).

An insulating pillar (38) (Figs. 3-6) or a pattern of insulating pillars (50) are formed in the wider channel (24), with the top surface of the insulating pillar(s) being coplanar with the upper surface of the insulating layer (22) (col 5 L 28-34).

Such arrangement is to avoid dishing and overstretching during chemical and mechanical polishing (col 5 L 41-43).

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Conductive material (28) is formed into the channels and completely filled the channels (col 5 L 35-36).

The pattern of the insulating pillars (50) can be chosen in a staggered arrangement or having an edge pillar (54) that tailors to one's desire (Figs. 8 & 9). The pillar(s) are formed from the same layer of the insulating layer (col 6 L 24-26).

Jain is silent about having a reference width based on which the distance between the slit dummies are determined.

In view of Jain's teaching, one skill in the art would choose a pillar pattern or pillar spacing because such determination is required to provide an acceptable protector from polish damage (col 6 L 61-67).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Cathy Lam
Primary Examiner
Art Unit 1775

cfl
August 3, 2004